Web Technology I

Nature of the Course: Theory + Lab

Semester: IV

Course Code: BIT251

Presented by :

LB Gurung
lbgurung00@gmail.com

Course Contents:

Unit 1: Introduction	**(4 Hrs.)**
Unit 2: Markup Language	**(11 Hrs.)**
Unit 3: Style Sheets	**(10 Hrs.)**
Unit 4: Client Side Scripting	**(12 Hrs.)**
Unit 5: XML	**(8 Hrs.)**

Laboratory Works: The laboratory work includes creating web pages and applications with client side scripting using HTML, CSS, JavaScript and XML technologies.

Some basic terms used in HTML

Presented by :

LB Gurung
lbgurung00@gmail.com

What is Internet?

Introduction

- A network of networks
- Huge collection of computer networks , freely exchange information
- The world's largest computer network, consisting of millions of computers supporting tens of millions of users in hundreds of countries.
- Internet is the interconnection of millions of computer networks with millions of computer connected with the standard Internet Protocol suite (often called TCP/IP).

lbgurung00@gmail.com

- **Getting connected to the Internet**

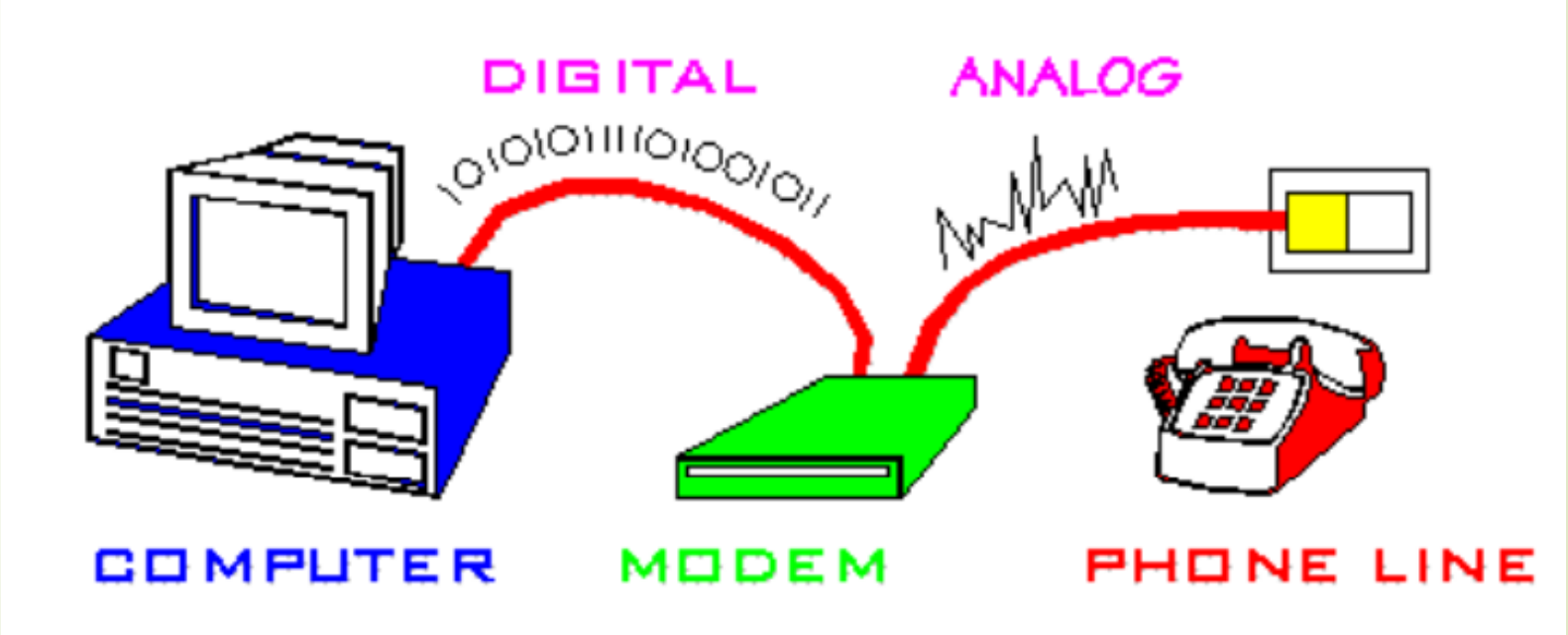
Basic two ways:

a. Dial-up Internet connection

b. Broad band or leased line Internet connection

Dial-up Internet connection:

✓ Dialing into an Internet Service provider's (ISP) computer



Dial-up Internet connection:

- Getting connected to the Internet

To establish dial-up connection to the Internet , requires the following:

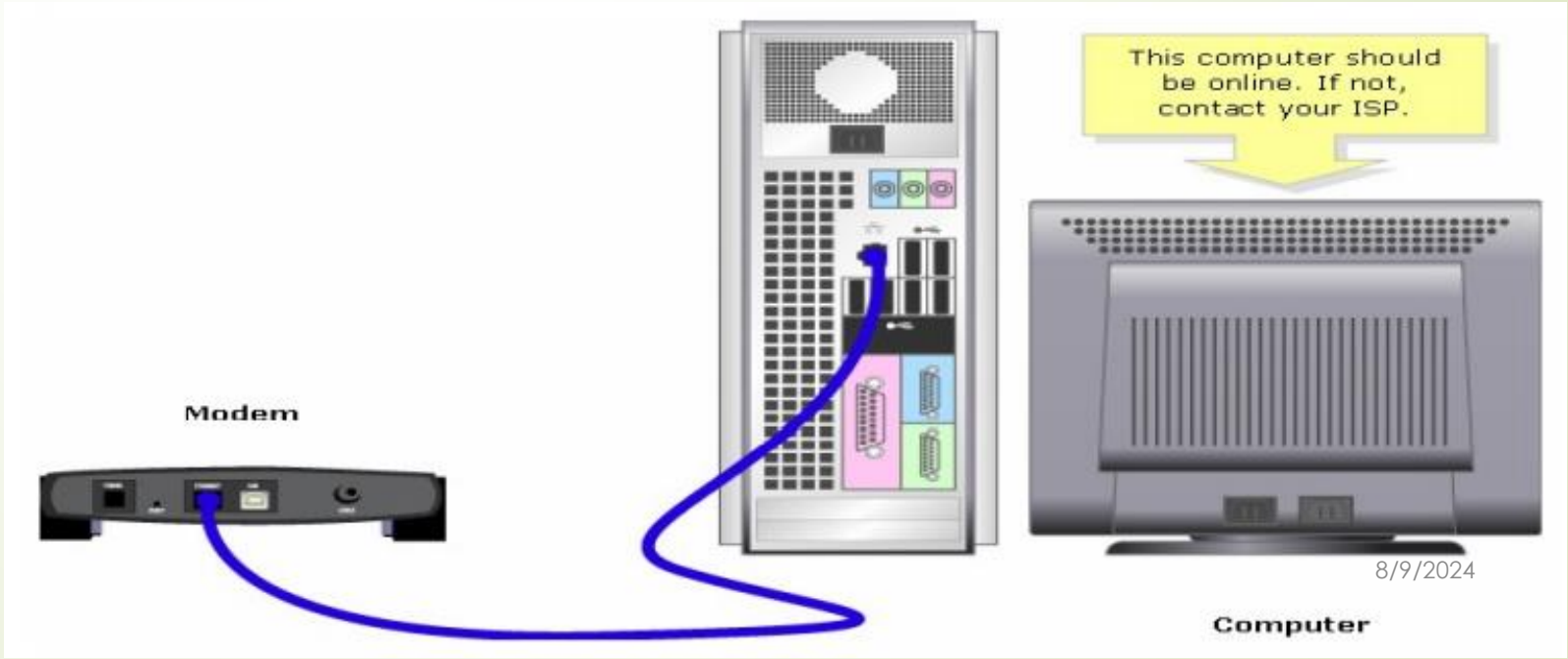
- ✓ An account with an ISP
- ✓ A telephone connection
- ✓ MODEM(Internal / External): used to connect telephone line to the computer
- ✓ communication software: Such as Internet explorer, Mozilla Firefox, Google Chrome, Safari, Opera, Netscape Navigator etc.
- ✓ Low speed

lbgurung00@gmail.com

Broad band or leased line Internet connection

- Getting connected to the Internet

- ✓ Direct connection to an ISP if you have fixed cable or a dedicated phone line to the ISP
- ✓ It is the high speed Internet connection provided through DSL, Fiber, Wi-Fi, Cable or satellite
- ✓ High speed



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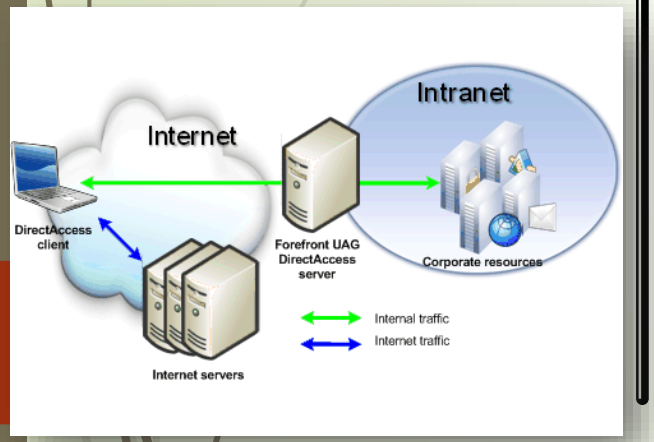
What is Intranet?

- The term intranet is a comprised of two words: "Intra" means internal and the "net" represents the network.
- The Intranet, therefore, can be defined as the internal network or It is a private network with access limited to the authorized users only.
- Accessed only by authorized users , especially members or employee of an organization
- The main purpose of the Intranet is to share company information and computing resources among employees
- "Intranet is a private version of Internet" or A version of the Internet confined to an organization.

❑ Intranet



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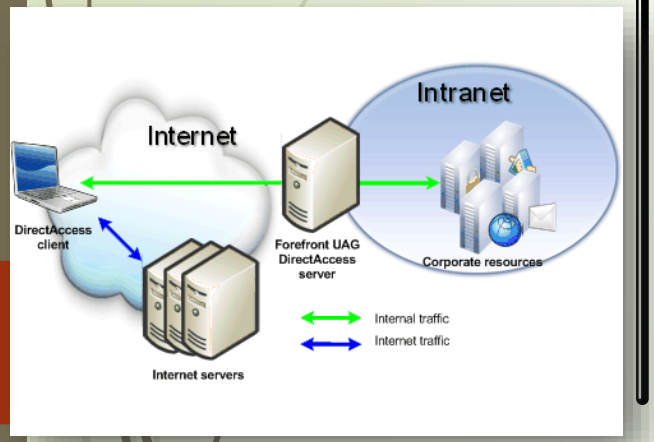


- **Which one is better; Internet or Intranet?**

The objective of Internet and Intranet is different. If you have to access the contents from all over the world like research for student, then Internet is the best.

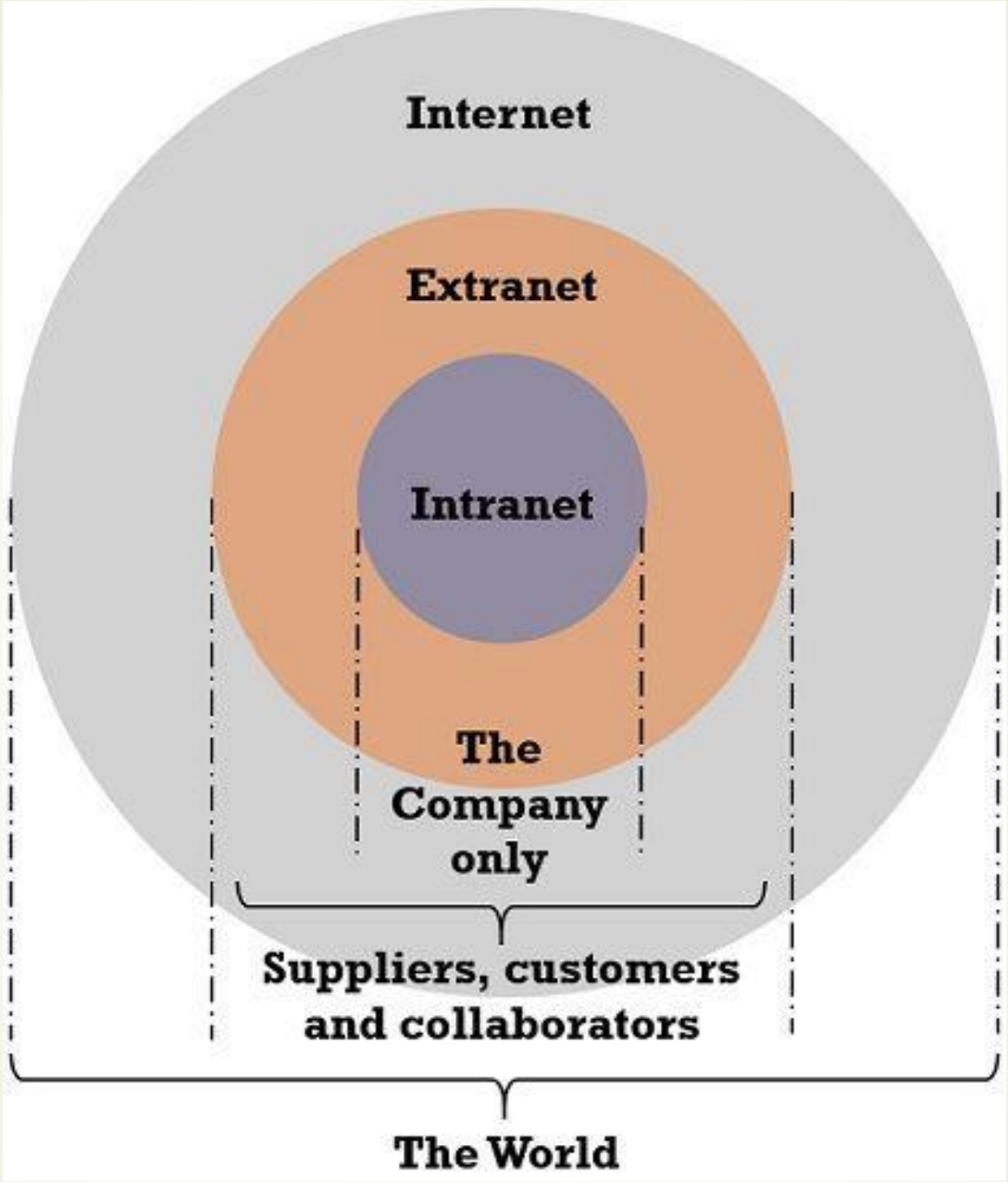
But, if you are the employee of the organization and you only need to access the files of the organization, then Intranet is the best.

❑ What is Extranet?

- An enterprise network that **connects internal and external subscribers** via subnetworks, facilitating exchanges between employees and people outside the company. Or
- It is the type of network that allows users from outside to access the Intranet of an organization.
- Access to the extranet is possible from several locations.

❑ Extranet

- Difference between:
  - Internet,
  - Intranet and
  - Extranet



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- Difference between:
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  - Intranet and
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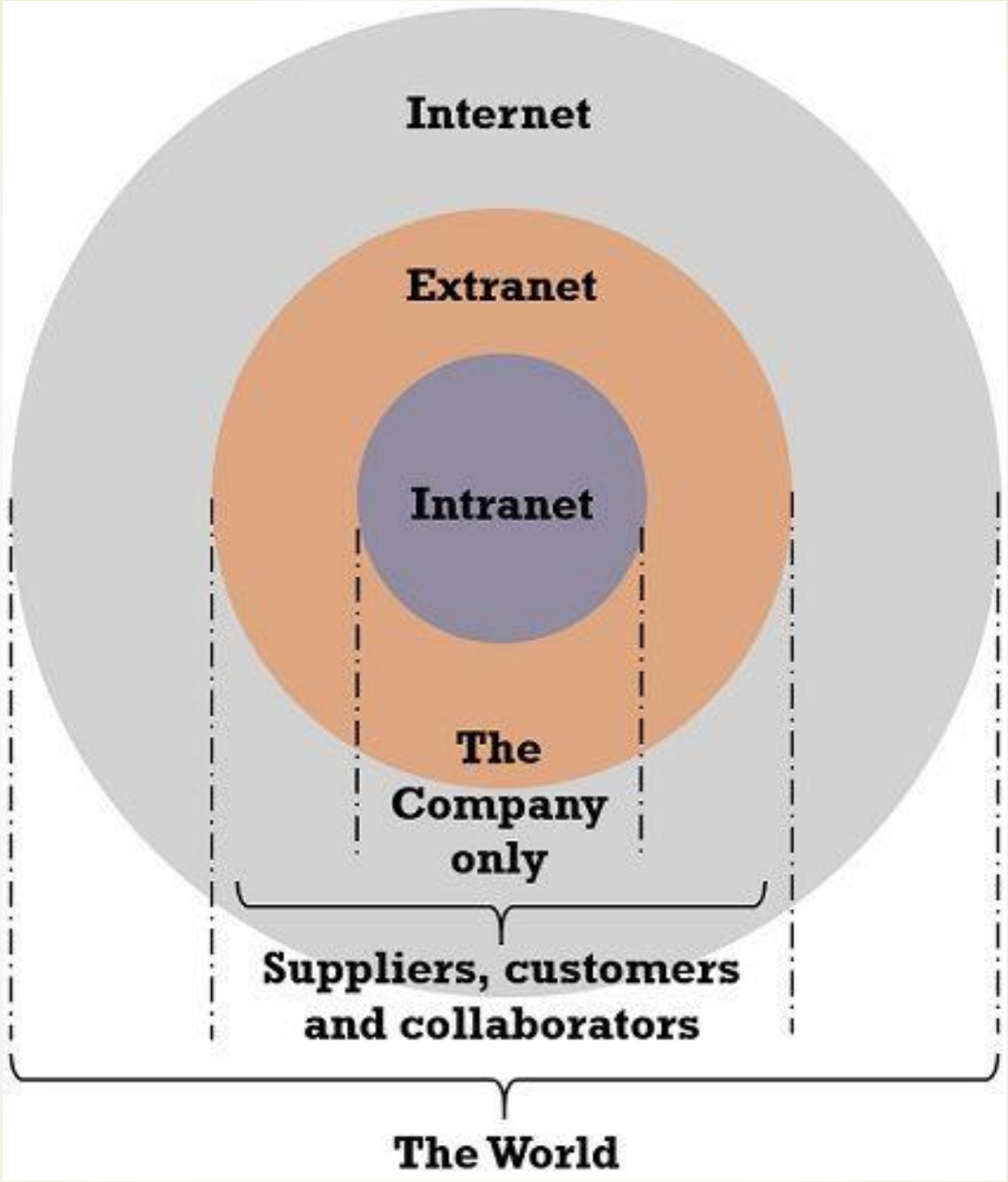


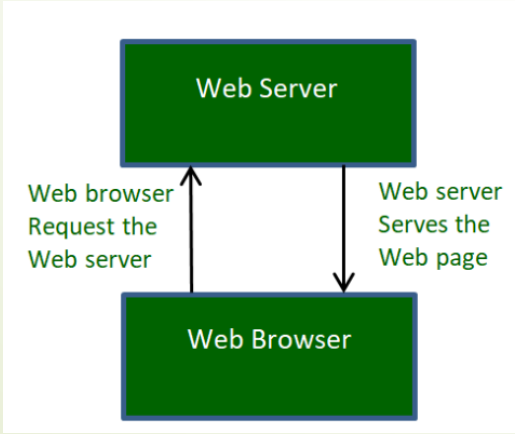
- Difference between:
  - Internet,
  - Intranet and
  - Extranet

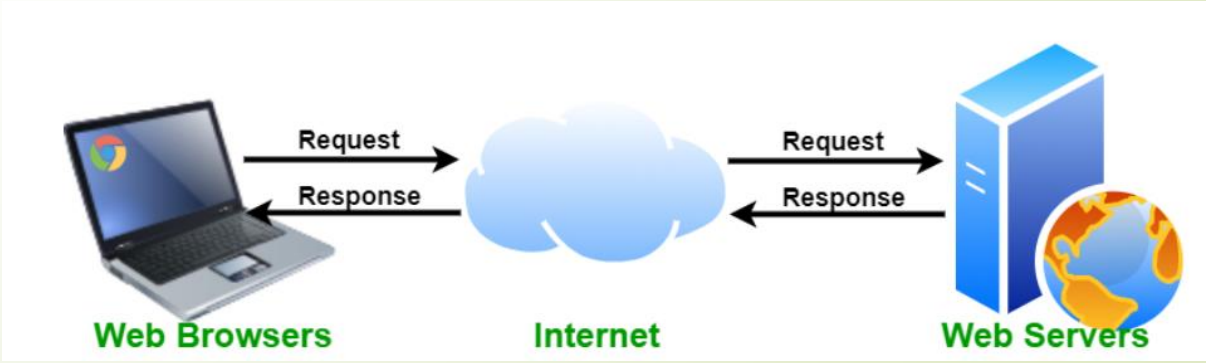
Parameters	Internet	Intranet	Extranet
▪ Access	Public	Private	Semi-private
▪ Users	Everyone	Members of a specific company	Group of closely related firms
▪ Purpose of the network	Its purpose is to share information throughout the world.	Its purpose is to share information throughout the organization.	Its purpose is to share information between members and external, members.
▪ Relation	It is the network of networks.	It is derived from Internet.	It is derived from Intranet.
▪ Data security	Not secured	Secured	Secured
▪ Information	General	Proprietary	Selective
▪ Network area	Large	Small	Small

Web Server

- Web Servers are computers that deliver(serves up) web pages. All web pages are stored in the web server. Or
- The term "Web Server" is defined as a server software or hardware that is designed to handle client requests on the World Wide Web
- Every Web server has an IP Address and possibly a domain name

Example:- Apache server, Microsoft's Internet Information Server(IIS),NGINX,Lighttpd





Web Browser

- A Web browser or Web client or Internet Browser is a software application for retrieving, presenting and traversing information resources on the WWW.

  Example:- Internet Explorer, Mozilla firefox, Google Chrome, NCSA moisc, safari, Opera mini ,Bolt ,Torch, lynx

Webpage

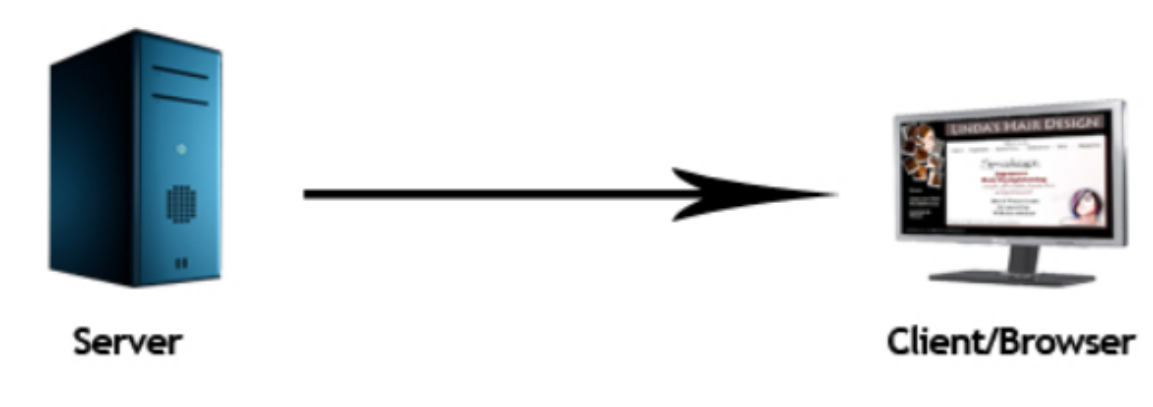
- Fundamental unit of a web
- Collection of information that is stored in the web site
- A document that contains text, images, videos and other internet services
- There are two types of web pages:
  - Static Web Pages
  - Dynamic Web Pages

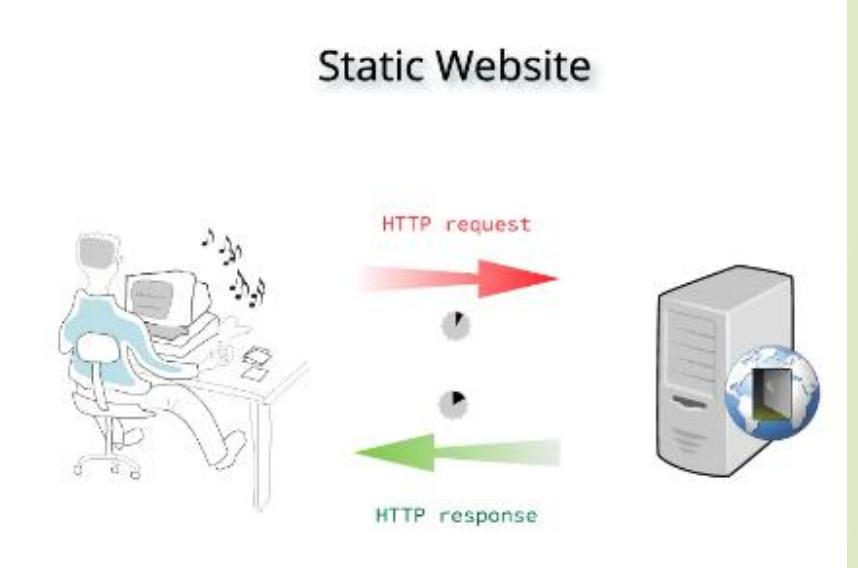
- **Static webpages**

✓ Simple web pages- written in languages like JavaScript, HTML, CSS, etc., and stored in a web server.

✓ In the case of static web pages, as soon as a server receives a request for a page, it immediately sends a response to the client with no additional processing. Users will always view the same content regardless of their location, device type, and web browser.

✓ In static web pages, Pages will remain the same until someone changes it manually.





lbgurung00@gmail.com

Dynamic Webpages

- ✓ Dynamic Web Pages are written in languages such as CGI, AJAX, ASP, ASP.NET, etc.
- ✓ In dynamic web pages, the Content of pages is different for different visitors. It takes more time to load than the static web page.
- ✓ Dynamic web pages are used where the information is changed frequently, for example, stock prices, weather information, etc.

- Website
  - Collection of related web pages
  - The web page that appear first when accessing the web site is called a home page
  - Every website has its own address called Internet address
  - Example:-www.ctevt.org.np,www.facebook.com, www.adarshaschool.edu.np

Search Engine

- Website that collects and organizes content from all over the world
- Users enter the query for searching and the search engine provide the relevant content that matches the query
- The first search engine created was Archie

Example:

http://www.google.com , www.webcrawler.com

www.altavista.com , www.bing.com , www.ask.com

www.yahoo.com , www.aol.com

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❑ ISP(Internet Service Provider)

- An ISP is a company that provides access to the Internet.
- Local ISPs of Nepal are: World link, Subisu, Classictech, vianet, Nepaltelecom, Broadlink etc.

URL(Uniform Resource Locator)

- Uniform Resource Locators or URLs are referred to as 'web addresses'.
- They specify the location of web pages or resources on the Internet and the ways of their retrieval. These are viewable in the address bars of the web browsers or on the search results pages.

URL(Uniform Resource Locator)

❑ Messenger Services

- Useful service of network which is used to monitor the network and receive pop-up messages for the network user
- Widely used in chat software which helps user to inform which users are online and offline, send software, perform voice chat or video chat

Example: MSN messenger, yahoo messenger

Upload and Download

Your Computer

UPLOAD

DOWNLOAD

FTP Server

- FTP is a part of the Internet that enables client computers to transfer files
- Transferring files from an FTP site to the client is known as **downloading**
- Transferring files from the client to an FTP site is known as **uploading**
- Clients may store files on an FTP site's server.

DNS (Domain Name System)

- Naming system for computers, service or any other resource available in Internet
- Converts the website names typed in web browser address bar to the IP addresses of the Web servers hosting those sites
- **IP address** is a unique number separated by period

WWW(World Wide Web)

- It is a service of the Internet provided with the help of software
- The WWW , or simply Web, is a way of accessing information over the medium of the Internet
- It is mainly controlled with the help of HTTP

❑ Web Hosting

- A web hosting service is a type of Internet hosting service that allows individuals and organizations to make their website accessible via the World Wide Web.
- Web hosts are companies that provide space on a server owned or leased for use by clients, as well as providing Internet connectivity, typically in data center.

❑ HTTP

- HTTP, HyperText transfer protocol is the standard Web transfer protocol
- The HTTP is the language the Web clients and Web Servers use to communicate with each other
- It is essentially the backbone of the Web
- Default port used by HTTP is 80

❑ HTTPS

- HTTPS stands for Hyper Text transfer Protocol Secure. It is a secured version of the HTTP protocol that uses SSL(Secure Sockets Layer).
- HTTPS allows secure ecommerce transactions, such as online banking
- HTTPS connects on port 443

❑ Scripting

- A script is a set of instructions either to the web browser or to the server
- Script provide changes to the webpage

❑ Types of Scripting Language

- There are two types of scripting language

a. Client Side Scripting language

b. Server Side Scripting language

Types of Scripting Language

a. Client Side Scripting language

- ✓ Client side scripting is the class of computer programs on the web that are executed in client side , by the user's web
- ✓ The web browser executes the client side scripting that resides at the user's computer
- ✓ Code can be seen
- ✓ Does not involve server processing

- ✓ Examples of Client side scripting language are:
- HTML
- CSS
- Javascript
- Vbscript

b. Server side scripting language

- ✓ Server Side Scripting language gets executed by Server
- ✓ Only output is sent to browser
- ✓ Code cannot be seen

Examples of server side scripting language are:

- PHP
- Ruby
- ASP
- Perl
- Python

- Web 1.0
- Web 2.0 and
- Web 3.0

- Web 1.0
- Web 2.0 and
- Web 3.0

- ✓ **Web 1.0** was the first generation of the Web that mostly was filled and linked with **static web pages** where information was published in **HTML pages** and most of the content was typed and published on the Web servers and users used it to publish and share information with others.
- ✓ The content of the web pages was embedded directly into html pages and the user experiences were not dynamic and responsive. During this era, the Internet was mostly accessed from desktop computers.
- ✓ **Web 1.0 is known as the "read-only Web." You couldn't "react" to posts with comments or likes. Instead, you just passively consumed information.**
- ✓ Web 1.0 lasted from the late 1980s until 2005.

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- Web 1.0
- Web 2.0 and
- Web 3.0

Key features of Web 1.0

- ✓ Static web pages filled with text and images content
- ✓ Websites were hosted and maintained by Web Server administrators
- ✓ Web layouts were statically created using HTML pages
- ✓ All Web browsers were not on the same page and content was not displayed same in all browsers
- ✓ User will have to refresh the pages of the content to see the updated content
- ✓ Web front end technologies is HTML

lbgurung00@gmail.com

- Web 1.0
- Web 2.0 and
- Web 3.0

Web 2.0(2005 – present)

- ✓ The next "phase" of the Web was **Web 2.0**. Web 2.0 is simply the web that we know today.
- ✓ Web 2.0 also known as dynamic web, can be thought as a dynamic web where more businesses moved to the Internet. The data became more dynamic, and evolution and use of backend databases started.
- ✓ Web 2.0 is completely interaction-based. We engage through texts and comments, and we can easily attach and share content like images and music with other people
- ✓ Some notable apps that flourished in Web 2.0: Instagram, YouTube, Facebook, and of course, Google. That is why this era of the web is also called the "Social Web".
- ✓ Read and Write web

- Web 1.0
- Web 2.0 and
- Web 3.0

Key features of Web 2.0

- ✓ Modern and responsive Web that can be accessed from any device, anywhere, and anytime
- ✓ Dynamic web pages with automatic content updates from various data sources
- ✓ Modern front end technologies HTML 5, CSS, and JavaScript, native mobile frameworks, and hybrid Web frameworks
- ✓ Launch and success of social media platforms
- ✓ Growth and adoption of cloud computing platforms
- ✓ Smart devices, smart cars, and smart homes
- ✓ Internet of Things and Internet of Everything
- ✓ Rise of artificial intelligence, machine learning, big data, data science, and automation
- ✓ Introduction of augmented reality, virtual reality, mixed reality and similar gadgets
- ✓ Introduction of voice-enabled systems such as Alexa, Google Home, and Siri

- Web 1.0
- Web 2.0 and
- Web 3.0

- **Web 3.0**

✓ The next "phase" of the web is called **Web 3.0**.

✓ Web 3.0 is a **Semantic Web**. This means that rather than just searching for content based on keywords or numbers, we can use AI to understand the semantics (i.e. meaning) of the content on the web. This would allow **machines to understand and interpret information like humans** (instead of like machines).

✓ The main purpose of the Semantic Web is to enable users to find, share and combine information more easily.

✓ Executable web

- Web 1.0
  - Web 2.0 and
    - Web 3.0

Key features of Web 3.0

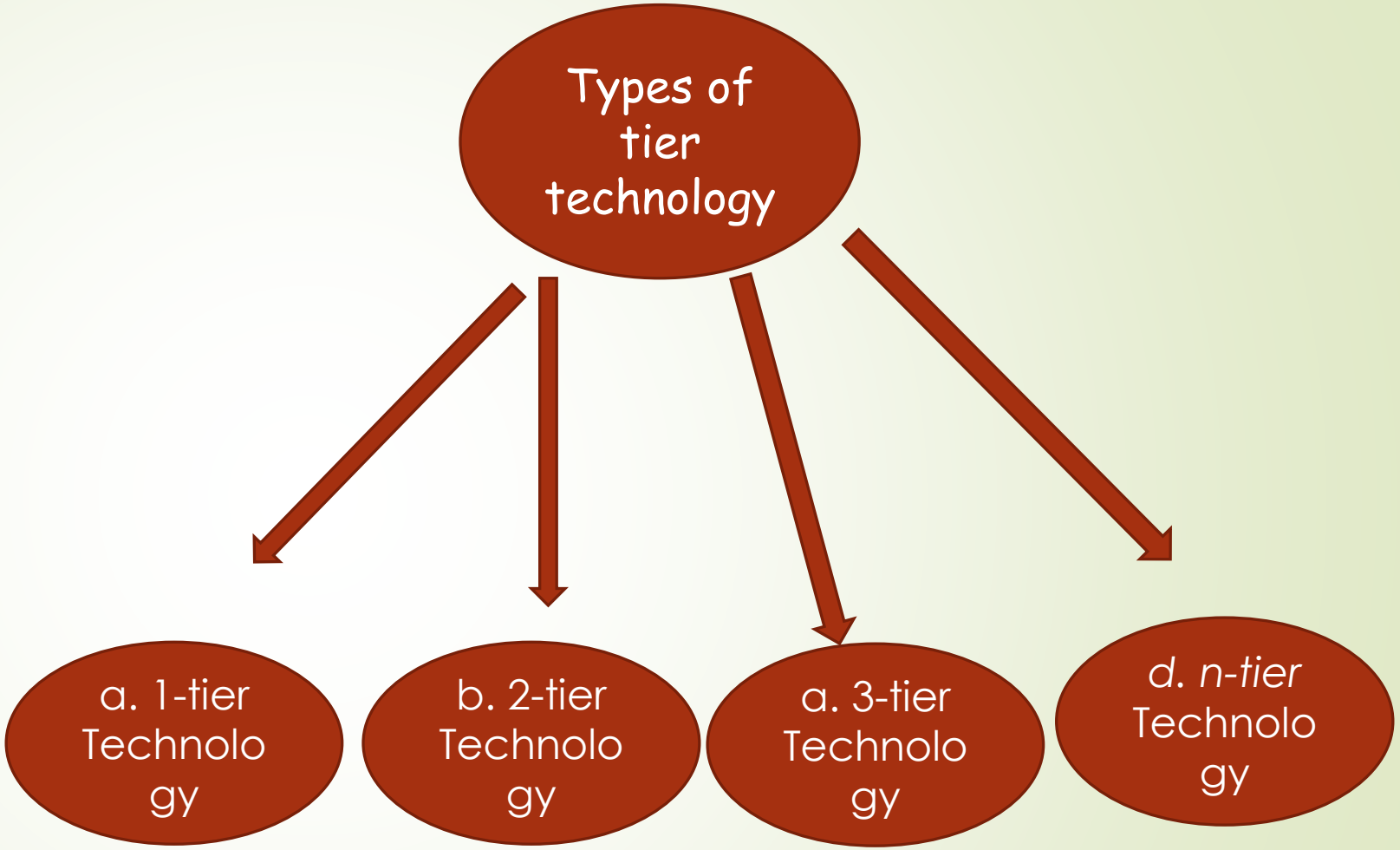
- Sematic Web
- Ubiquity
- AI and Machine Learning
- Decentralized Networks on a peer-to-peer network spread out around the world
- Spatial Web and 3D Graphics

Tier Technology

- Tier is also known as layer. A tier is an abstract concept that defines a group of technologies that provides one or more services to its clients.
- Modern Web developers use tiers, such as the Web tier, to construct websites

Types of Tier Technology

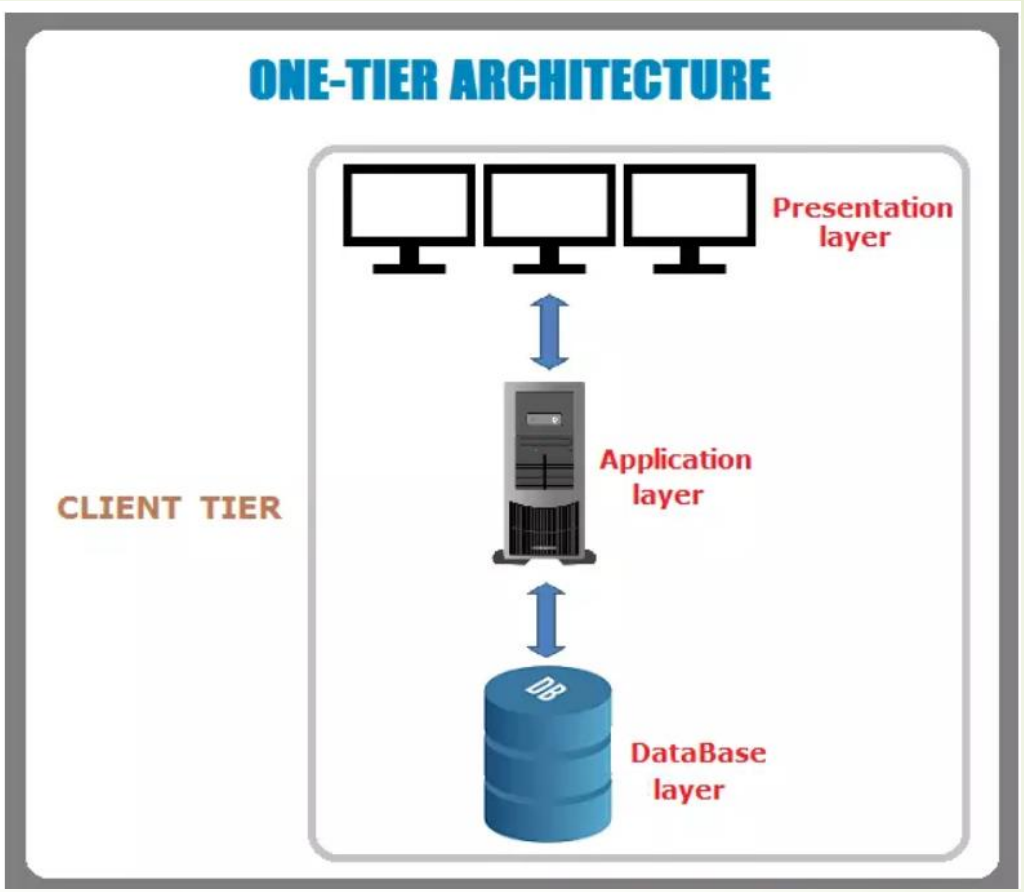
The different types of tier technology are:



❑ 1-Tier Technology

- Also known as standalone application
- 1-tier architecture has all the layers such as Presentation, Business, Data Access layers in a single software package. Applications which handles all the three tiers such as MS-Office come under one tier application.
- The data is stored in the local system or a shared drive.

❑ 1-Tier Technology



The client, server, and Database all reside on the same machine is 1-tier architecture A simple one tier architecture example would be anytime you install a Database in your system and access it to practice SQL queries

❑ 1-Tier Technology

Advantages of 1-tier architecture:

- ✓Simple and fast for lower number of users
- ✓Efficient

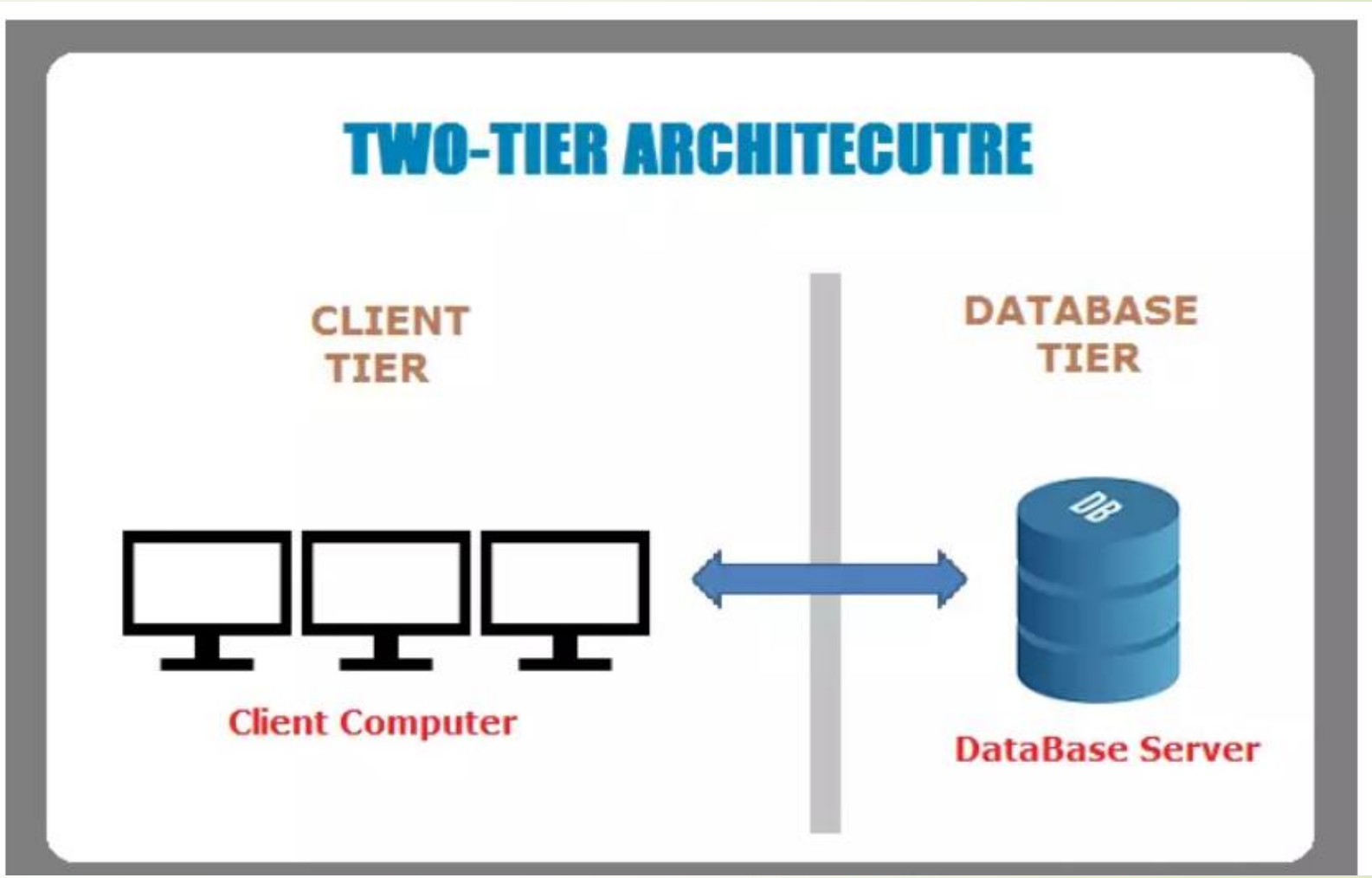
Disadvantages of 1-tier architecture:

- ✓Completely **unscalable** and only one user can access the system at a time.

❑ 2-Tier Technology

- ✓ Also known as client server application
- ✓ The direct communication takes place between client and server. There is no intermediate between client and server.
- ✓ Runs faster(tight coupled)
- ✓ The Two-tier architecture is divided into two parts:
    a. Client application (client tier)
    b. Database(Data tier)

❑ 2-Tier Technology



❑ 2-Tier Technology

- ✓ On client application side the code is written for saving the data in SQL server database.
- ✓ Client system handles both Presentation and Application layers and Server system handles Database layer
- ✓ Client system sends the request to the Server system and the Server system processes the request and sends back the data to the Client System

❑ 2-Tier Technology

Advantages:

- Easy to modify and maintain
- Communication is faster

Disadvantages:

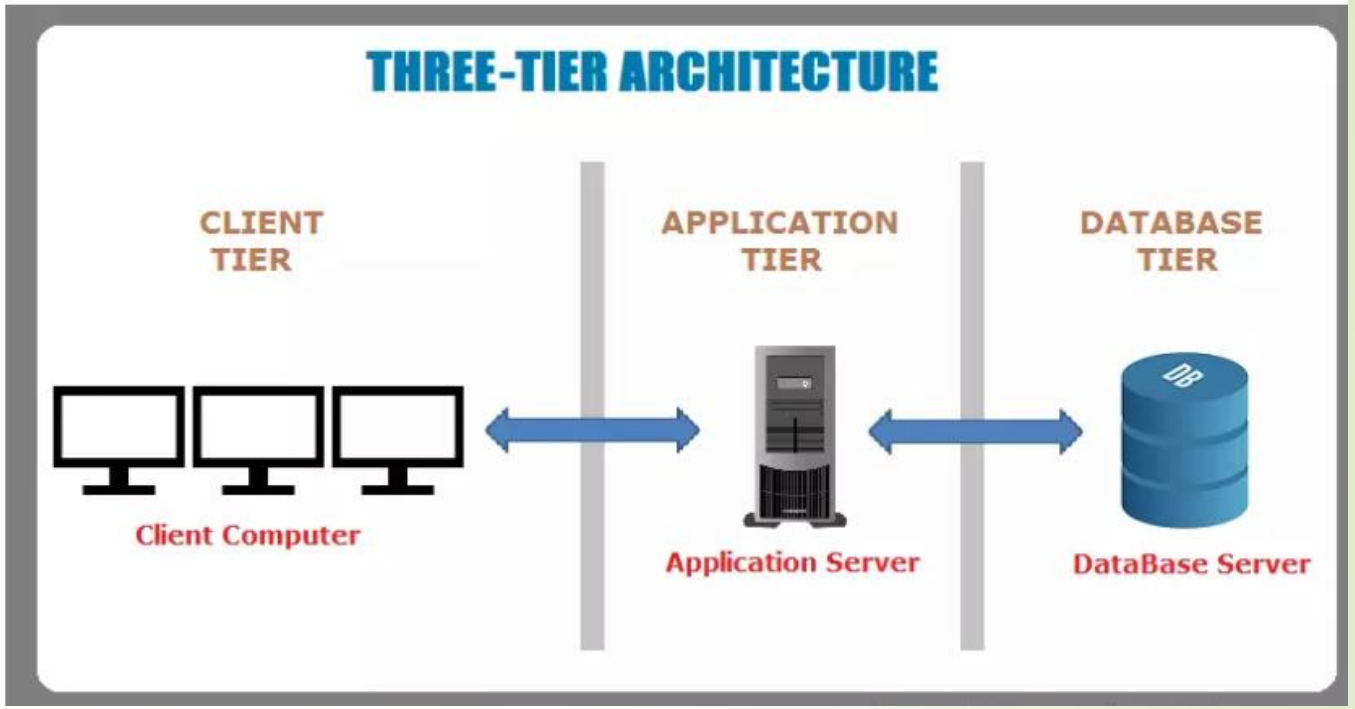
✓ Application performance will be reduce upon increasing the users.

✓ Cost-ineffective

❑ 3-Tier Technology

- Also known as Web based application
- It includes three layer as:
  - ✓ Presentation tier(Client layer)
  - ✓ Business tier(Logic layer)
  - ✓ Data tier(Data Access layer)

❑ 3-Tier Technology



- Client layer:

- Contains UI part of our application

- This layer is used for the design purpose where data is presented to the user or input is taken from the user

❑ 3-Tier Technology

- Business tier(Logic layer)

✓ It provides business services

✓ All business logic written like validation of data , calculation , data insertion etc.

✓ Makes communication faster between client and data layer.

- Data layer:

✓ Actual database comes in the picture

✓ It contains methods to connect with database or other data source and to perform insert, update, delete, get data from data source based on our input data.

❑ 3-Tier Technology

- Advantages:

✓ Performance is high

✓ Improved security

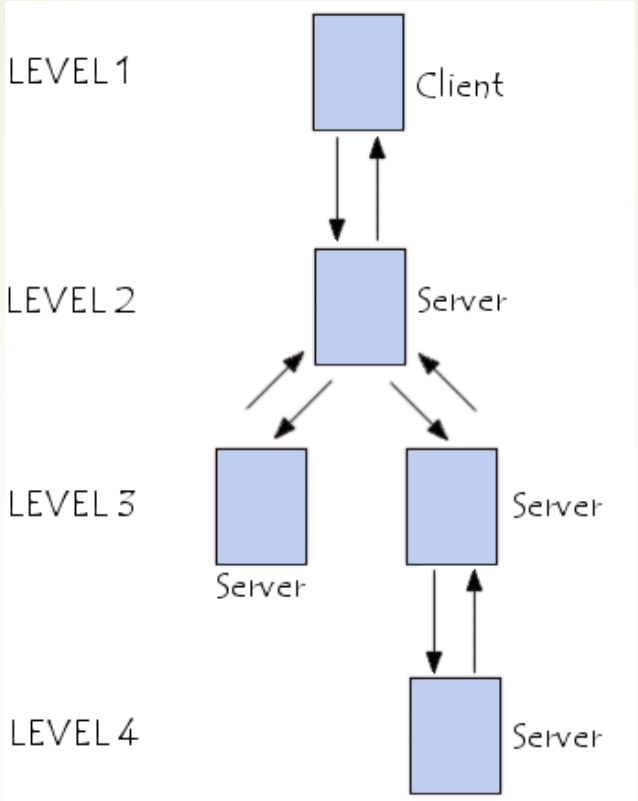
✓ Better reusability

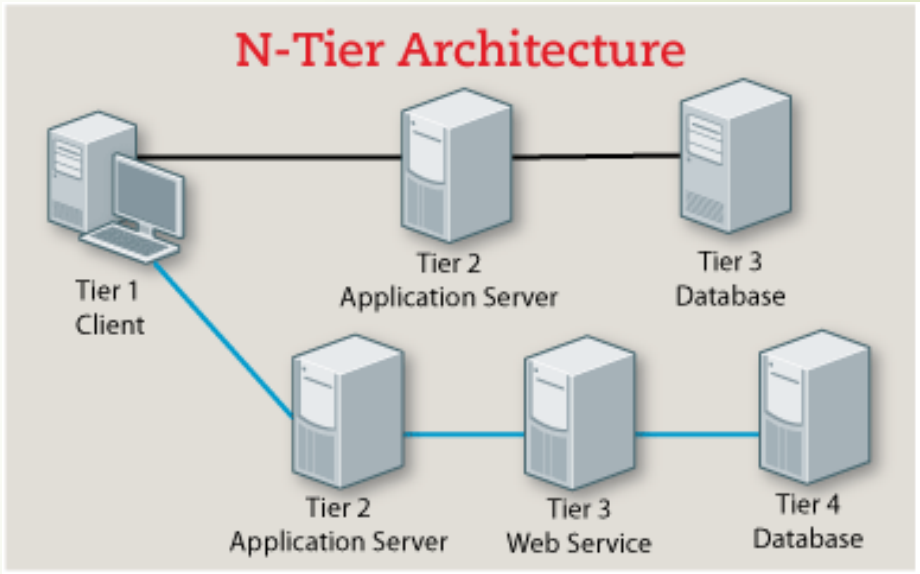
✓ Easy to maintain and manage

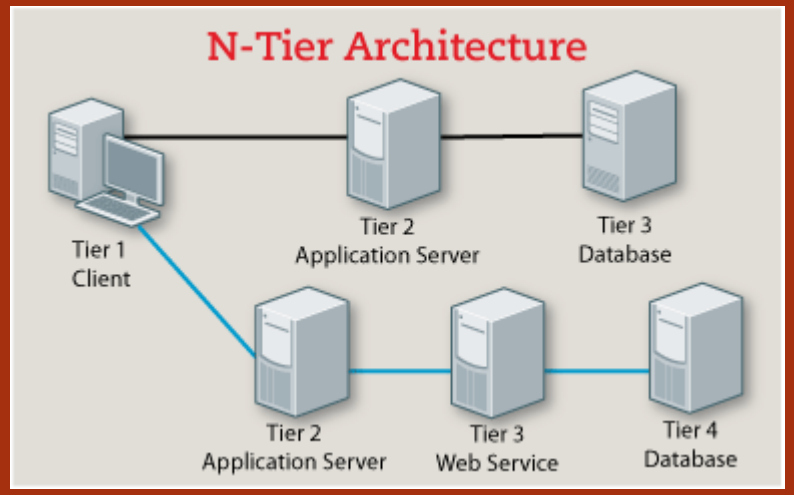
❑ n-Tier Technology

- ✓ N-Tier application also known Distributed application.
- ✓ It is similar to 3-tier architecture but number of application servers are increased and represented in individual tiers in order to distributed the business logic so that the logic will be distributed.
- ✓ A server can use services from other servers in order to provide its own service.
- ✓ amazon.com is the popular site that uses n tier architecture

❑ n-Tier Technology







Advantages:

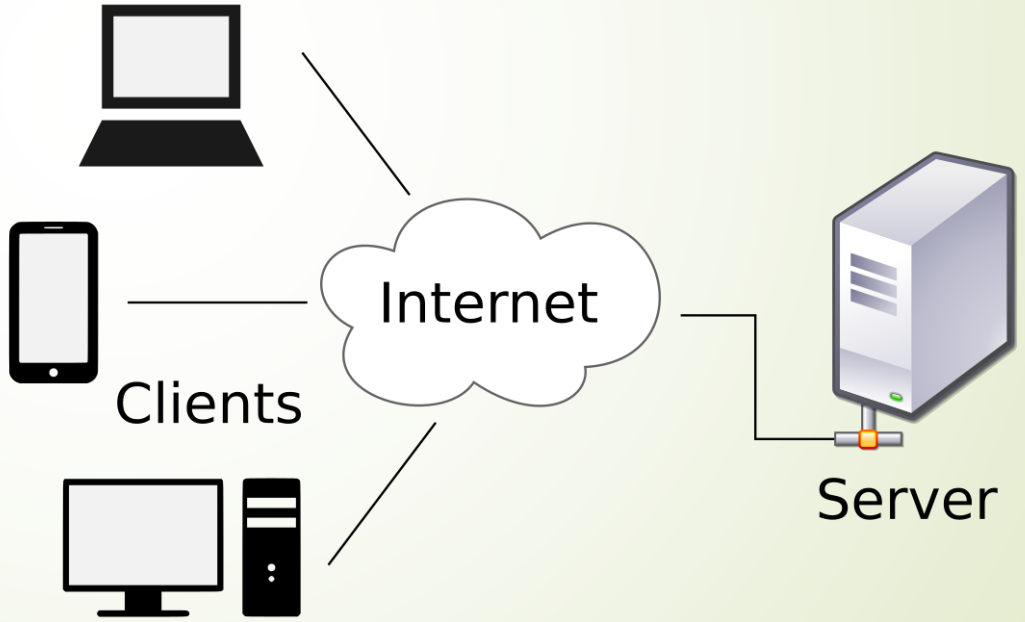
- Secure
- Easy to manage
- Flexible
- Scalable
- Reusability

Disadvantages:

- Increase in complexity

- What is client server architecture?

- ✓ Clients are PCs on which users runs applications. Clients rely on servers for resources, such as files, devices and even processing power.



- What is client server architecture?

- ✓ **For example** : In hospital data processing, a client computer can be running an application program for entering patient information while the server computer is running another program that manages the database in which the information is permanently stored.

- What is client server architecture?

- ✓ **Advantages:**
- **All** files are stored in central location
- Network peripherals are controlled centrally
- Backups and network security is controlled centrally
- Users can access shared data which is centrally controlled

❑ Review Questions:

- What is tier technology? Explain its advantages
- Explain one-tier , two-tier and three-tier architecture with its block diagram.
- Differentiate between two-tier and three-tier technology
- Describe n-tier technology with its advantages and disadvantages.

Unit: 2

Introduction to HTML

- ✓ **HTML** stands for **Hyper Text Markup Language**. It is a client side scripting language which is used to design static webpages
- ✓ Hyper means reference/link ,Text means data Markup means predefined, Language means communicate
- ✓ It is not a programming language like C , Python etc. It is a markup language . Markup language is used to define the text document within tag which defines the structure of web pages

Presented by:
LB Gurung
lbgurung00@gmail.com

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- ✓ It is developed by **Tim Berners's Lee in 1990** at CERN in Geneva , Switzerland

HTML Version

- ✓ There are different version of HTML. They are:
  - HTML 1.0
  - HTML 2.0
  - HTML 3.2
  - HTML 4.01
  - XHTML
  - HTML 5

❑ Why HTML is not a programming language?

HTML is not a programming language due to the following reasons:

- ✓ It contains no programming logic
- ✓ It does not have common conditional statement like if/else
- ✓ It cannot evaluate expressions or do any math
- ✓ It dose not modify or manipulate data in any way
- ✓ User can not declare variable and write functions

✓Advantages of using HTML

- ✓It is highly flexible and user friendly
- ✓Every browser supports HTML Language
- ✓It is used to create webpages
- ✓It is platform independent
- ✓Add multimedia example graphics , video and audio

✓Disadvantages of using HTML

- ✓Security features are not good in HTML
- ✓ It can not be used to develop dynamic webpages
- ✓It can not be used as a programming language

Difference between HTML 4 and HTML 5

HTML 4	HTML 5
1. It didn't support audio and video without the use of flash player support.	1. It supports audio and video without the use of flash player support.
2. It does not allow drag and drop effects	2. It allows drag and drop effects
3. It works with all old browsers	3. It supported by all new browser like Firefox, Mozilla, Chrome, Safari, etc.
4. Older version of HTML are less mobile-friendly.	4. HTML5 language is more mobile-friendly.
5. Not possible to draw shapes like circle, rectangle, triangle etc.	5. HTML5 allows to draw shapes like circle, rectangle, triangle etc.

❑ Requirements to implement HTML

The requirements to implement HTML are:

- Editor(Text) like notepad, Notepad++, sublime
- Browser(Microsoft Edge, Google chrome etc.)

Process to execute HTML

Steps:

1.Write HTML code in Text Editor(notepad, notepad++)

2. Save the with extension .htm or .html

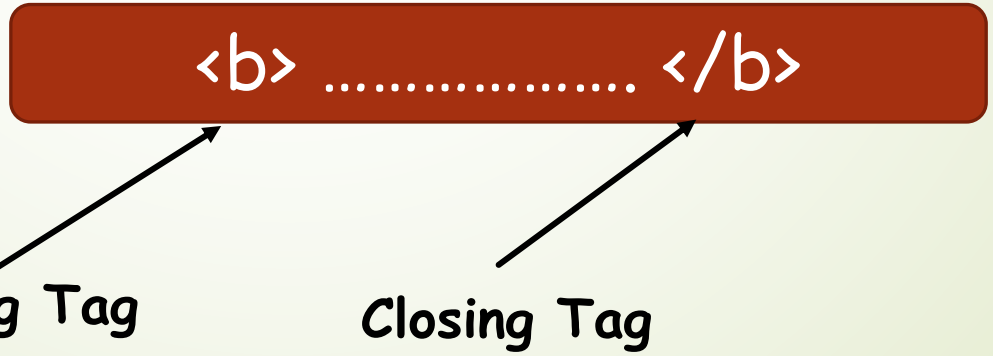
3. Open the file in Web browser(Google chrome,Opera mini etc.)

❑ Elements of HTML

The elements of HTML are :

- ✓ Tags
- ✓ Attributes

HTML Tags: A coded command inserted in a document that specifies how the document, or a portion of the document, should be formatted. Tags are used by all format specifications that store documents as text files. It contains two parts: opening tag and closing tag. For example:



Types of HTMl Tags:

HTML tags can be grouped in to two groups. They are:

a. Container or Paired tag and

b. Empty or Singular tag

❑ Container Tag

The container tags are paired and have starting and ending tags.

Eg: <HTML> …… </HTML> , ……

❑ Singular Tag

The empty tag do not have closing tag.

Eg:
 , <HR>

Elements of HTML…

- **HTML attributes:**
  - ✓ HTML can have attributes
  - ✓ Attributes provides additional information to the HTML element
  - ✓ Attributes are always specified in the start tag
  - ✓ Attributes come in name/value pairs like name:"value"
  - ✓ Attributes always should enclosed in quotes. Double style quotes are the most common , but single style quotes are also allowed
  - ✓ Example: this is a link

❑Structure of an HTML Document

```
<html>
<head>
<title>my page</title>
</head>
<body>
……….
……….
</body>
</html>
```

A simple HTML Document:

```
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

Example explanation:

- ✓ The <html> element is the root element of an HTML page
- ✓ The <head> element contains meta information about the document
- ✓ The <title> element specifies a title for the document
- ✓ The <body> element contains the visible page content
- ✓ The <h1> element defines a large heading
- ✓ The <p> element defines a paragraph

❑ To Specify Background color

- ✓ The <body> tag is used to specify the background, image or color, the text color, the link color, the visited link color and the active link color. To specify a background color, your body tag must be :

<Body Bgcolor = "Green">

This would cause your background color is **green** . But if we want to specify a color for our text

<Body Bgcolor = "Green" text = "Yellow">

- **To Specify a background image for an HTML document:**

Syntax:

```
<body background="image.jpg">
```

Where image.jpg is a image file

Here are some basic color codes

1. #000000 = Black
2. #FF0000 = Red
3. #008000 = Green
4. #0000FF = Blue
5. #FFFF00 = Red + Green = Yellow
6. #FF00FF = Green + Blue = Cyan
7. #FFFFFF = Red + Green + Blue = White
8. #808080 = Gray
9. #800000 = Maroon
10. #800080 = Purple
11. #008000 = Green
12. #808000 = Navy
13. #008080 = Teal
14. #C0C0C0 = Silver
15. #00FF00= Lime
16. #FF00FF=Fuchsia

❑ Comments in HTML

Comment tags are used to insert comments in the HTML source code.

User can add comments to their HTML source by using the following syntax:

<!--This is a comment -->

It helps the coder and reader to understand the piece of code used for especially in complex source code.

Note: Comments are not displayed by the browser, but they can help document your HTML source code.

```
<html>
    <Head>
    <Title> My Page </Title>
    </Head>
    <body bgcolor="red" text= "black">
     This is a test page. I did not believe I knew enough to create a web page. I thought designing web pages and learning HTML was really difficult. Now I know that I can do it and is not so difficult after all
    </Body>
    </HTML>
```

Example 1:

❑ Formatting Tags

To make attractive web pages, we have to use tags. The tags which are used to format or alter the appearance of the webpage, called formatting tags. For example:

 …….. : for **bold**

 …….. : for *italic* etc.

❑ Formatting Tags

✓ Text formatting tags:

- The process of changing the appearance of the HTML document is known as Text formatting tag
- Some examples of text formatting tags are:

Tag	Description
<B>…….</B>	Defines **bold** text
<I>……..</I>	Defines *italic* text
……	Defines small text
……	Defines strong text like bold
<u>……..</u>	Defines underline text

❑ Formatting Tags

✓ Text formatting tags:

Tag	Description
_{…….}	Defines **subscript** text
^{……..}	Defines ***superscript*** text
<pre>……</pre>	Defines preformatted text
<strike>……</strike>	Defines strike through text
<blockquote>……</blockquote>	Defines a long quotation
<mark>……</mark>	Defines highlighted text
…….	Defines paragraph break
…….	Defines centering text or paragraph

✓ Example 2

```
<HTML>
<Head>
<Title> My web page</title>
</head>
<body bgcolor = "Green" >
<center><h1><mark> MMAMC</mark></h1>  </center>
<b>It is the best college for IT in Eastern Development Region.</b>
<p> It has well equipped computer lab </p>
<pre>
Objectives:
1. To realize peace and prosperity
2. To promote  research and development in IT </pre>
</body>
</html>
```

❑ Attribute of <P> tag

Attributes are other properties of tags, which are used to provide additional information to the browser. Different tag support different attributes.

Syntax:

<P Align = "Right">

<P Align = "Left">

<P Align = "Center" >

<p align="Justify">

Example: <P Align = "Center">

Programming is fun.</P>

```
<!DOCTYPE html>
<html>
<head>
<title> my first page </title>
</head>
<body>
<center> <b> Examples of text formatting</b> </center><br>
<i>Equations and formula</i> <br>
H<sub>2 </sub> O = H<sub>2</sub> + O <sub>2 </sub> <br>
a<sup>2 </sup> + b<sup>2</sup>
</body>
</html>
```

Indicates HTML version i.e. 5

❑ Heading tags(Block level formatting)

- ✓ Heading is used to display the text in different sizes. These are six levels of heading tags using HTML from <H1> to <H6>.
- ✓ The <H1> tag gives the biggest font while <H6> tag gives the smallest font.

Attributes like:

- ✓ Align(Center,Left,Right) can be used to display the heading in different alignment.

For example: <h1 align = "center"> Nepal </h1>

Example 3:

```
<!DOCTYPE html>
<HTML>
  <head>
    <title>heading example</title>
    </head>
    <body>
    <h1>This is heading 1</h1>
    <h2>This is heading 2</h2>
    <h3>This is heading 3</h3>
    <h4>This is heading 4</h4>
    <h5>This is heading 5</h5>
    <h6>This is heading 6</h6>
</body>
</html>
```

❑ HORIZONTAL RULES (<HR> tag)

✓ This tag is used to draw horizontal rule separating major sections of a text or to insert a line across the page.

For example:

<HR Align = "Left" size = "4" width = "800" color = "Red" >

❑ <FONT> …… </FONT> tag

This tag is used to format the size, type face and color of the enclosed text. The attributes used with font tags are:

- ✓ **FACE:** It specifies the font name
- ✓ **SIZE :** It sets the font size which is from 1 to 7. Size 1 gives the smallest and size 7 gives the largest font. **The default size is 3.**
- ✓ **COLOR** : It specifies the color of the text.

Eg : MMAM college

❑ <Marquee> ….. </Marquee> tag

This tag is used to display scrolling text in different direction.

The attributes are:

- ✓ **Behavior** :It sets the movement behavior of the text. It may be alternate, scroll or slide.
  - **Alternate** : It helps the text bounce forward and backward within the marquee.
  - **Scroll** : It helps the text start completely of one side of the screen and start again.
  - **Slide** :It helps the text start completely of one the screen and stop the marquee text.
- ✓ **Bgcolor:** It helps to specify background color of the marquee.
- ✓ **Direction**: It helps to specify the direction in which way you want to scroll the text. Directions are Left, Right, Up and Down.

Example: <Marquee Direction = "Down" bgcolor = "red"> HTML </Marquee>

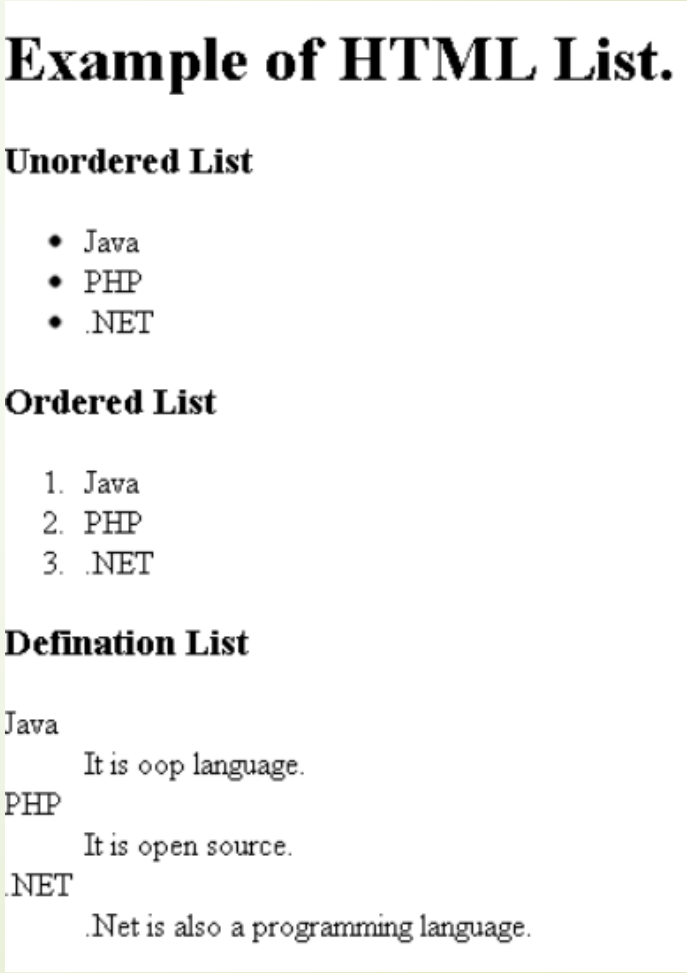
<marquee behavior="alternate" scrollamount="15" bgcolor="green">BCA_3rd_Sem</marquee>

❑ List and Special Character

- ✓ Lists are used in HTML pages to present the information in easy format.
- ✓ Different types of list are used in web pages.
  - **Order List (Use Number)**
  - **Unordered List(Use Bullets)**
  - **Definition list/Description list**

✓ Order List (Use Number)

Any list prepared in a numbering format or holding a sequence is an order list. The order list starts with <OL> tag and end with </OL> tag. The list of items is created after using <LI> tag.



❑ Attributes of order list tag(Type and Start)

- ✓ **Type** : The **type** attributes controls the number system used in order list.

  Type = "1" produces the list in 1, 2, 3……. Order

  Type = "A" produces the list in A, B, C……. Order

  Type = "I" produces the list in I, II, III …… order of format.

  Type= "i" produces the list i,ii,iii,iv…… order of format.

- ✓ **Start** : The start attribute altered the numbering sequence or it species the starting value.

❑ Unordered List (Use Bullet)

It presents the information in bullet format. The unordered list starts with <UL> tag and close with </UL> tag. Each item starts with <LI> tag. Type is used as an attribute of unordered list. The type specifies types of bullet.

Type = "Disc" , produces solid round black bullet.

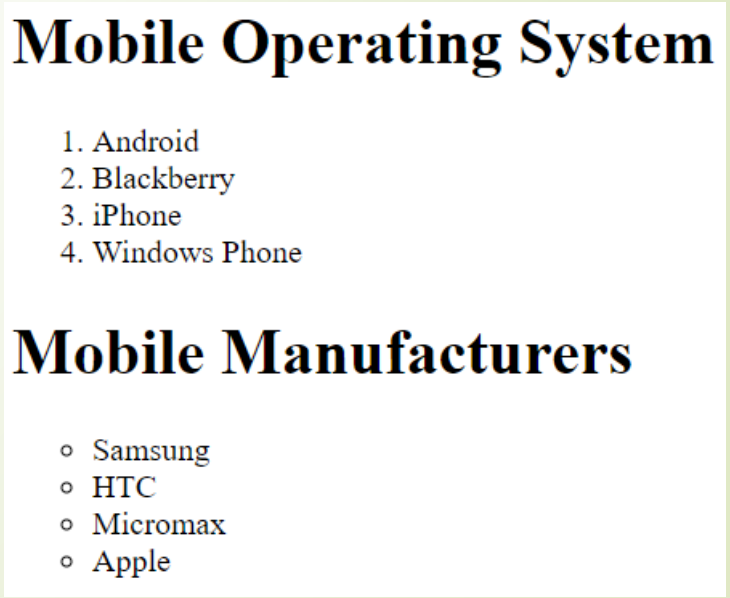
Type = "Square" , produces square box black bullet.

Type = "Circle" , produces solid black circle bullet.

Example: 4

```
<html>
 <HEAD>
 <TITLE> List Example
</TITLE>
 </HEAD>
 <BODY> <H1> Mobile Operating
System</h1>
<OL>
<LI> Android </li>
<LI> Blackberry</li>
 <LI> iPhone</li>
 <LI> Windows Phone </li>
</OL>
<H1>Mobile Manufacturers</h1>
<uL TYPE = "circle">
<LI> Samsung</li>
<LI> HTC <li>
<LI> Micromax </li>
<LI> Apple</Li>
 </ul>
</BODY>
</HTML>
```

Output:



Example: 5

```
<html>
<head>
<title>my page</title></head>
<body>
<CENTER><h1>Types of computer on the basis of Speed / Size</h1></CENTER>
<OL>
    <LI>Super computer</LI>
    <LI>Main frame computer </LI>
    <LI>Mini Computer</LI>
    <LI>Micro Computer </LI>
    <UL>
    <LI>Portable Micro Computer </LI>
    <OL Type= "i">
    <LI>Laptop</LI>
    <LI>Notebook</LI>
    <LI>Palmtop</LI>
    </OL>
    <LI>NOn- Portable Micro computer</LI>
        <OL Type="a">
        <LI>Desktop PC</LI>
        <LI>Workstation Computer </LI>
        </OL>
    </UL>
  </OL>
</BODY>
</HTML>
```

Types of computer on the basis of Speed / Size

1. Super computer
2. Main frame computer
3. Mini Computer
4. Micro Computer
    - Portable Micro Computer
        i. Laptop
        ii. Notebook
        iii. Palmtop
    - NOn- Portable Micro computer
        a. Desktop PC
        b. Workstation Computer

Example: 5

LBG

Example of nested list

Memory

1. Primary Memory
    a. RAM
        - SRAM
        - DRAM
    b. ROM
        - PROM
        - EPROM
        - EEPROM
2. Secondary Memory
    a. Optical disks
        - CD
        - DVD
    b. Magnetic disks
        - HD
        - FD

Example:

LBG

Example: 5

```
<html>
<head>
<title>list</title>
</head>
<body>
<h2>Example of nested list</h2>
<h2>Memory</h2>
<ol type=1>
<li>Primary Memory</li>
    <ol type=a>
     <li>RAM</li>
        <ul type=square>
           <li>SRAM</li>
           <li>DRAM</li>
     </ul>
    <li>ROM</li>
          <ul type=square>
           <li>PROM</li>
           <li>EPROM</li>
            <li>EEPROM</li>
     </ul>
</ol>
<li>Secondary Memory</li>
    <ol type=a>
      <li>Optical disks</LI>
<ul type=sqaure>
                <li>CD</li>
                <li>DVD</LI>
          </ul>
      <li>Magnetic disks</li>
          <ul type=square>
           <li>HD</li>
           <li>FD</li>
    </ul>
</OL>
</ol>
</body>
</html>
```

Example of nested list

Memory

1. Primary Memory
   a. RAM
      - SRAM
      - DRAM
   b. ROM
      - PROM
      - EPROM
      - EEPROM
2. Secondary Memory
   a. Optical disks
      - CD
      - DVD
   b. Magnetic disks
      - HD
      - FD

LBG

❑ Definition Lists

HTML supports a list style which is called **definition lists** where entries are listed like in a dictionary or encyclopedia. The definition list is the ideal way to present a glossary, list of terms, or other name/value list.

Definition List makes use of following three tags.

<dl> – Defines the start of the list

<dt> – A term

<dd> – Term definition

</dl> – Defines the end of the list

Example: 5

```
<html>
 <head>
<title>HTML Definition List</title>
 </head>
 <body>
<dl>
<dt><b>HTML</b></dt>
<dd>
    This stands for Hyper Text Markup Language</dd>
<dt><b>HTTP</b></dt>
<dd>This stands for Hyper Text Transfer Protocol</dd>
</dl>
 </body>
</html>
```

Example: 6

❑ Special Character

Special Characters are the symbols or character entities used in the web page. Such character are used when they proceeded by ampersand (&) and followed by Semicolon (;).

Example: 6

```
<html><Head>
<Title> Using Symbols</Title>
</Head>
<Body>
Ampersand: &AMP;          <BR>
Copy Right:  &COPY;       <BR>
Registered trademark: &REG; <BR>
Left Angel Bracket: &LT;    <BR>
Right Angel Bracket: &GT;   <BR>
Double Quotes: &QUOT; <br>
Pound: &pound;<br>
Division:&divide; <br>
Multplication: &times;
</Body></HTML>
```

❑ Inserting Image

- **<IMG> tag**

This tag is used to insert images into the HTML document that should be displayed in the browser screen pictures with the file format .GIF and .JPG are supported by HTML.

GIF = Graphic Interchange Format

JPEG = Joint Picture/photographic Experts Group

PNG = Portable Network Graphic

Example: 6

This tag must always be accompanied with the **SRC** attribute.

Image Attributes

- ✓ ALIGN: It specifies the position of an image inside the document. There are five possible alignments: **Align = Top / Middle / Bottom /LEFT /RIGHT**

Note: Top, Middle and Bottom alignments are used in case of paragraph only. tag should be used for center alignment.

- ✓ **TITLE:** It is used to define some comments for image with the mouse pointer.
- ✓ **Border**: It displays the border around the image.
- ✓ **Width**:It displays the image according to the specified width of the image in pixels.
- ✓ **Height**:It displays the image according to the specified height of the image in pixel.

Syntax:

<IMG Align = "position" Border = "Value" Height = "Value" width = "Value" SRC = "Image path/location">

<img src="d"\image\ganesh.jpg" width="300" height="400" title="God">

- *Inserting animated image or video file and audio*

```
<video width="400" height="200"  controls>
 <source src="pop.mp4" type="video/mp4"><BR>
</video>
<audio controls>
 <source src="sabin.mp3" type="audio/mpeg">
</audio>
```

Attributes:

- Controls
- Autoplay
- Loop
- Muted
- poster